

Claims

1. Low reference voltage source, whereas the reference voltage V_r is temperature independent, comprising a low voltage- V_{PTAT} source, the voltage V_{PTAT} being proportional to the absolute temperature,
characterized in

that it comprises a voltage-to-current converter (VCC), comprising the low voltage- V_{PTAT} source and a resistor (R) and a current I at its input across a diode element (t) produces a control potential V, the temperature characteristics of contain the latter from the quotient V_{PTAT} / R between the voltage V_{PTAT} and the resistance of the resistor (R),

that a first current generator (t1) and a second current generator (t2), both being controlled by the control potential V, generate a first current I_1 and a second current I_2 , respectively, the temperature characteristics of which include the temperature characteristics of the said quotient V_{PTAT} / R ,

that the first current I_1 is conducted to a first terminal (X) on a first connection of a composition of series connected first resistor (R_a) and a second resistor (R_b), a second connection of said composition being grounded,

that a transistor (T; T') is diodelike forward connected between the first terminal (X) and the ground,

that the second current I_2 is conducted to a second terminal (Y) on a common connection (Z) of the first resistor (R_a) and the second resistor (R_b),

that the reference voltage V_r is tapped from the common connection (Z) of the first resistor (R_a) and the second resistor (R_b)

and that the first resistor (R_a) and the second resistor (R_b) are manufactured in the n-well technology in the same way as the resistor (R) within the voltage-to-current converter (VCC).

2. Low reference voltage source as recited in claim 1, characterized in
that an emitter of the vertical bipolar pnp transistor (T) is connected to the first terminal (X), the collector and the base of which are grounded.
3. Low reference voltage source as recited in claim 1, characterized in
that between the first terminal (X) and the ground a MOS transistor (T') is connected like a diode.
4. Low reference voltage source as recited in claim 2 or 3, characterized in
that the second current I2 is conducted to the second terminal (Y) which is a sliding terminal on the second resistor (Rb).
5. Low reference voltage source as recited in claim 4, characterized in
that the first current generator (t1) and the second current generator (t2) are selected so that the second current I2 exceeds the first current I1.
6. Low reference voltage source as recited in claim 5, characterized in
that the first and the second current generators (t1, t2) are forward connected MOS transistors.